Publication No. 3H9569
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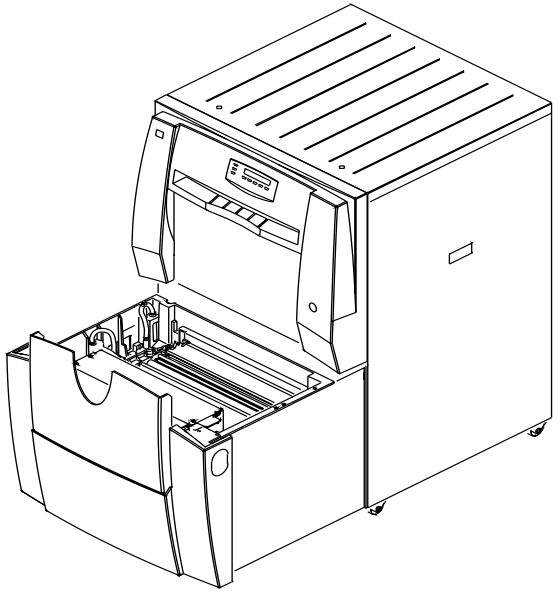
HEALTH IMAGING

PREVENTIVE MAINTENANCE
for the
Kodak X-Omat 3000 RA INTEGRATED PROCESSOR
Service Code: 3466
in a
Kodak X-Omat MULTILOADER 7000
Service Code: 3444

Important
Qualified personnel must service this equipment.



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This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Section 1: Requirements for Cleaning

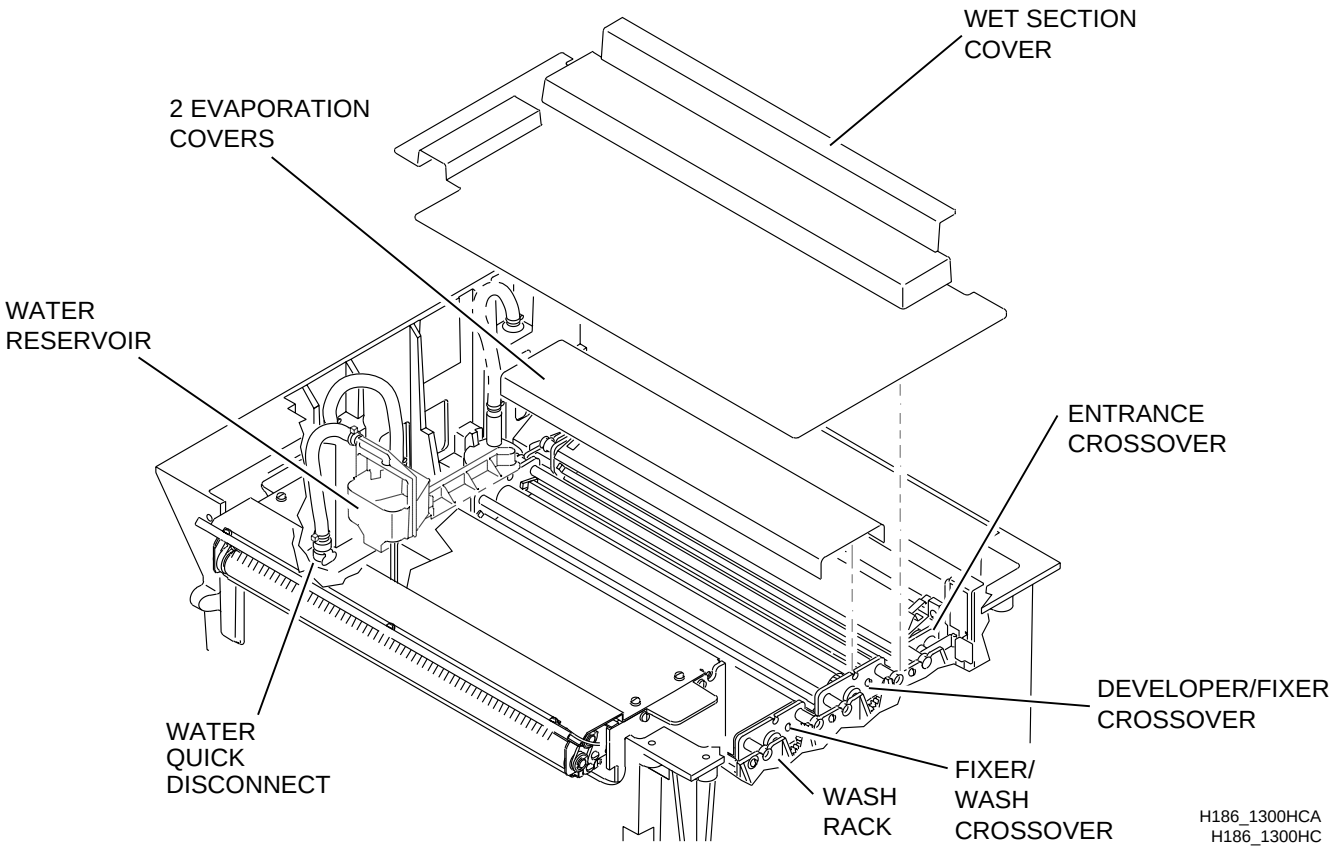
The following materials are recommended to do the maintenance procedure:

- soft BRUSH
- BOTTLE BRUSH
- LINT-FREE CLOTH or synthetic SPONGE
- *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER, Catalog No. 843 4615
- *Kodak* FIXER/WASH SYSTEM CLEANER, Catalog No. 139 5110
- ADJUSTMENTS AND REPLACEMENTS, Publication No. 3H9568
- 2 HOSE PINCH CLAMPS TL-2170
- DEVELOPER FILTER, Part No. 943442
- 10% Bleach solution or suitable cleaner for plastic
- NLGI - No. 2 LITHIUM BALL AND ROLLER BEARING GREASE TL-2324
- SPLASH GUARD, Part No. 918947
- DRIP TRAY, Part No. 459432
- GRADUATED CYLINDER, Part No. 479821

Section 2: Maintenance Procedures

Weekly Procedures

CROSSOVERS



Warning
Dangerous Voltage

[1] De-energize the PROCESSOR.

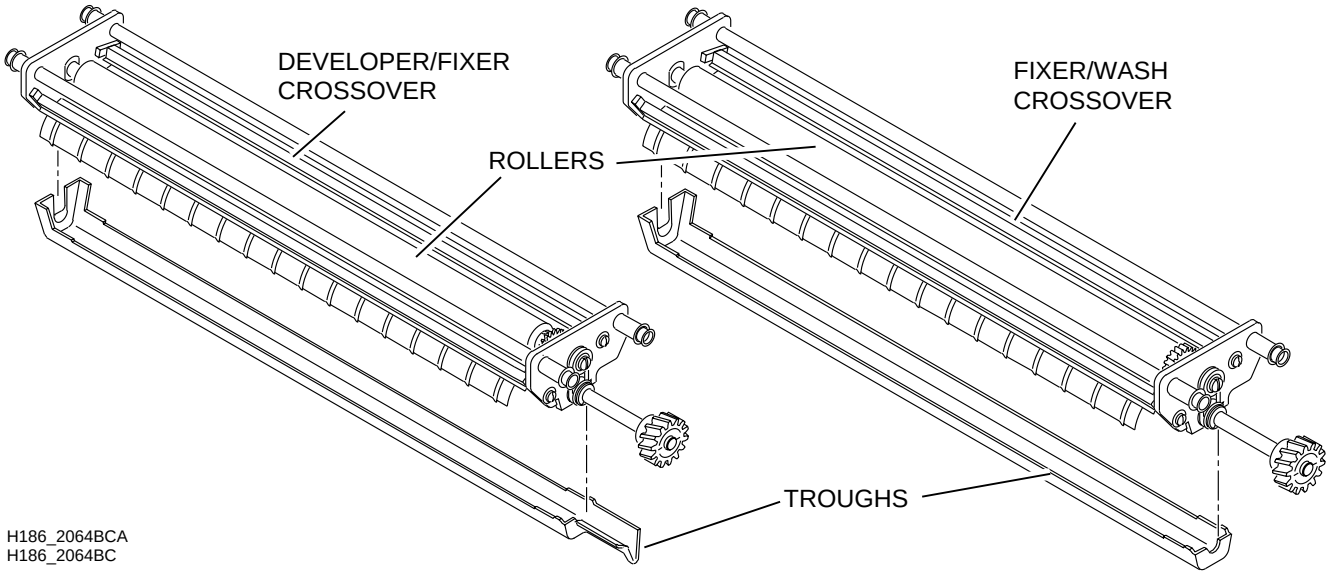
[2] Remove the WET SECTION COVER.

[3] Disconnect the WATER RESERVOIR from the CROSSOVERS.

[4] Remove:

- WATER QUICK DISCONNECT
- WATER RESERVOIR
- 2 EVAPORATION COVERS
- DEVELOPER/FIXER CROSSOVER
- ENTRANCE CROSSOVER
- FIX/WASH CROSSOVER
- WASH RACK

[5] Rinse the CROSSOVER ASSEMBLIES. Use warm water and a soft BRUSH to remove all chemical and mineral deposits



Important

Prevent damage. Do not use rough cleaning materials that scratch. The rinse water must not exceed 44°C (110°F).

[6] Clean the ROLLERS and GUIDE SHOES with a damp, LINT-FREE CLOTH or synthetic SPONGE.

[7] Check:

- all ROLLERS on the 3 CROSSOVERS and WASH RACK rotate freely and do not have excessive wear
- for squareness - See “RACK: Squareness.” ADJUSTMENTS AND REPLACEMENTS, Publication No. 3H9568.

[8] Remove the CROSSOVER TROUGHS from the DEVELOPER/FIXER CROSSOVER and the FIXER/WASH CROSSOVER.

[9] Check that the CROSSOVER TROUGHS:

- are clean
- have no cracks
- are not broken
- drain freely

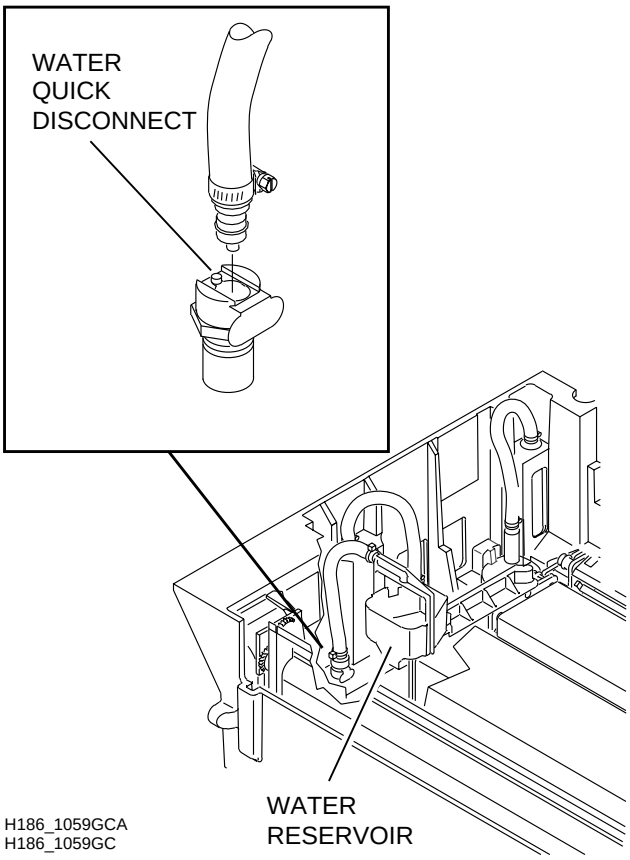
[10] Allow the ENTRANCE CROSSOVER to air dry before you install it in the PROCESSOR.

[11] Use a synthetic SPONGE to clean all chemical and mineral deposits from the processing area of the TANK.

[12] Install:

- WASH RACK
- 3 CROSSOVERS

[13] Check that the assemblies seat correctly.



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[14] Connect the WATER QUICK DISCONNECT.

[15] Install the WATER RESERVOIR on the CROSSOVERS.

[16] Check that the WATER RESERVOIR is positioned correctly on the CROSSOVERS.

[17] Install:

- 2 EVAPORATION COVERS
- WET SECTION COVER

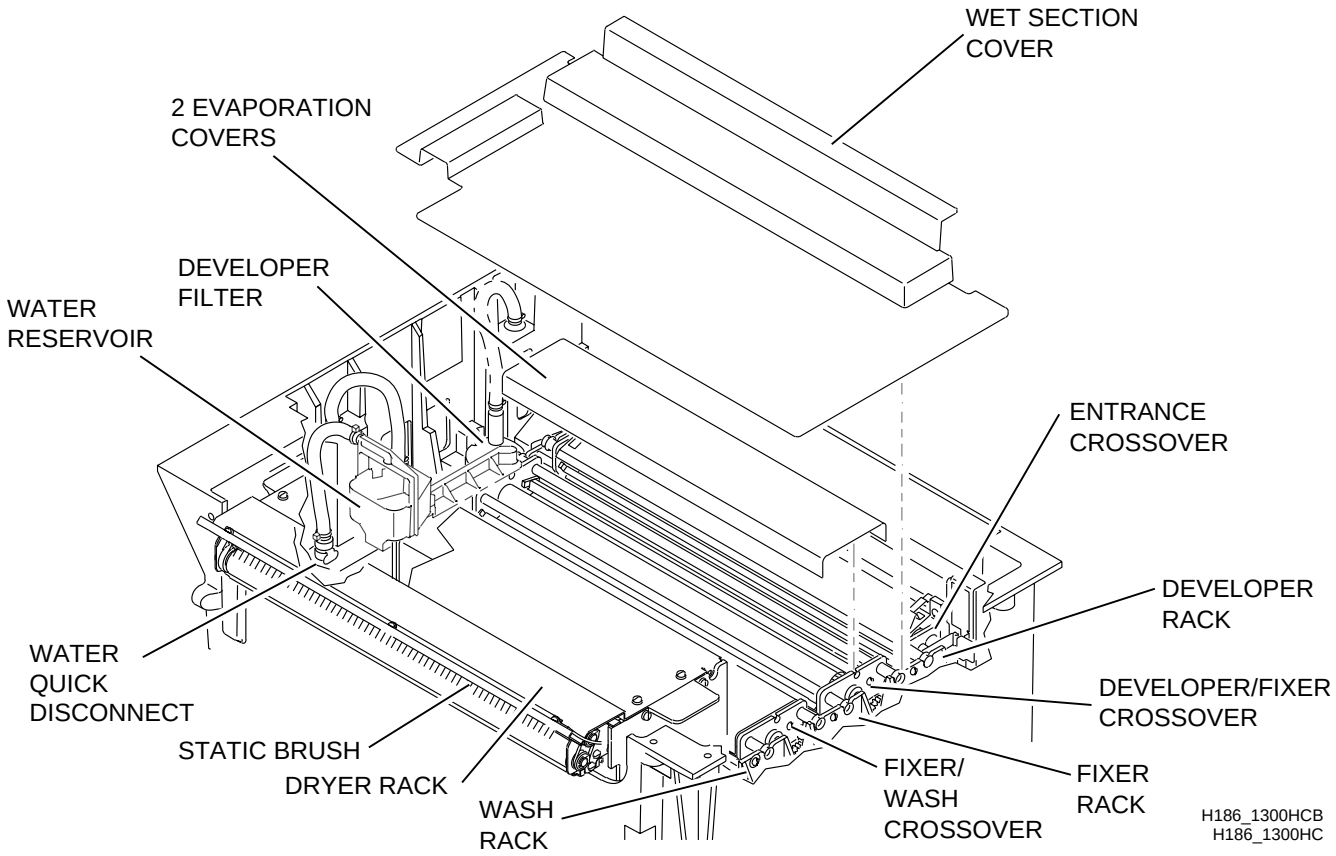
[18] Move the PROCESSOR fully into the MULTILOADER 7000 until latched.

[19] Energize the PROCESSOR.

[20] Process a test film and check for correct operation of the PROCESSOR.

Monthly Procedures

RACK ASSEMBLIES



Warning
Dangerous Voltage

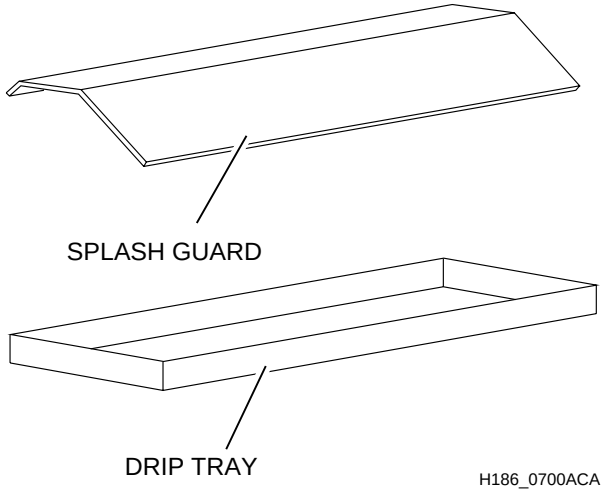
[1] De-energize the PROCESSOR.

[2] Remove the WET SECTION COVER.

[3] Disconnect the WATER RESERVOIR from the CROSSOVERS.

[4] Remove:

- WATER QUICK DISCONNECT
- WATER RESERVOIR
- 2 EVAPORATION COVERS
- 3 CROSSOVERS
- DRYER RACK
- WASH RACK



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Caution

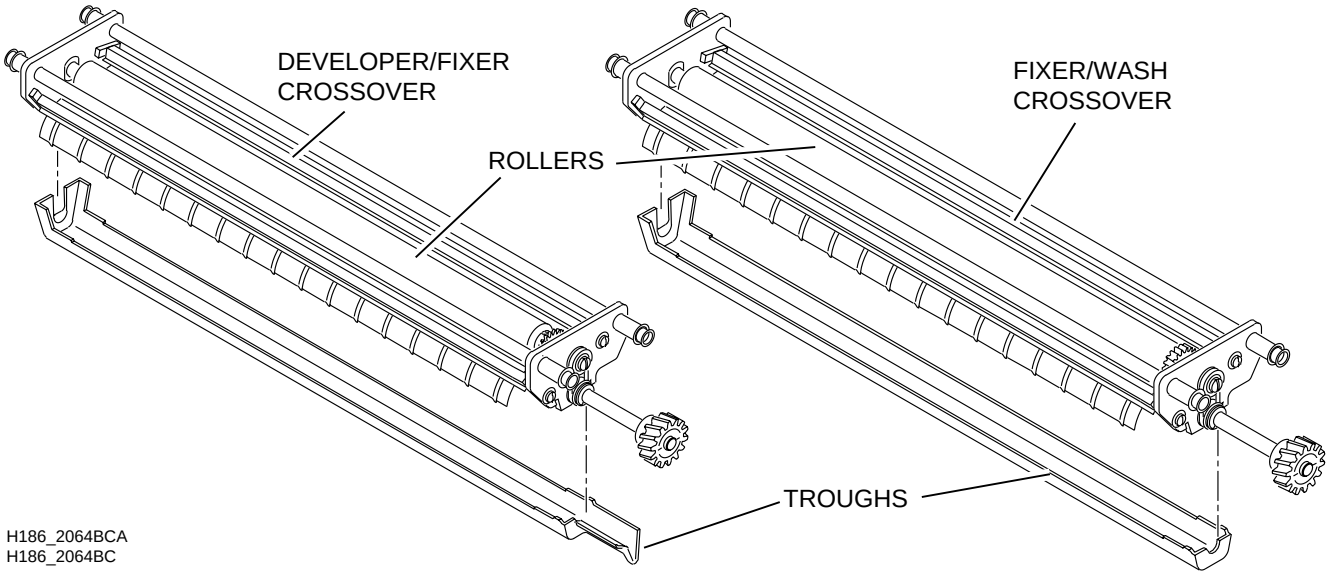
Prevent contamination and spills.

[5] Install the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK.

[6] Using the DRIP TRAY, remove:

- DEVELOPER RACK
- FIXER RACK
- SPLASH GUARD

[7] Clean the WASH RACK, FIXER RACK, DEVELOPER RACK, and the CROSSOVER ASSEMBLIES. Use warm water and a soft BRUSH to remove all chemical and mineral deposits.



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Important

Prevent damage. Do not use rough cleaning materials that scratch. The rinse water must not exceed 44°C (110°F).

[8] Clean the ROLLERS and GUIDE SHOES with a damp, LINT-FREE CLOTH or synthetic SPONGE.

[9] Remove the CROSSOVER TROUGHS from the DEVELOPER/FIXER CROSSOVER and the FIXER/WASH CROSSOVER.

[10] Check that the CROSSOVER TROUGHS:

- are clean
- have no cracks
- are not broken
- drain freely

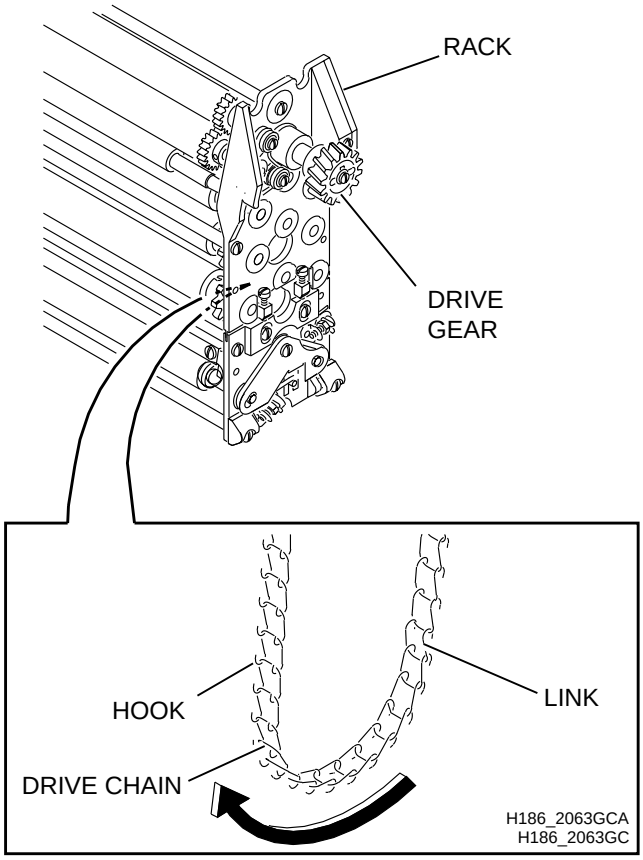
[11] Install the CROSSOVER TROUGHS.

[12] On all RACKS, check:

- E-RINGS and SPRINGS for correct tension, breakage, and corrosion
- GEARS for excessive wear
- all GEARS, SPRINGS and E-RINGS in correct position
- ROLLERS and BEARINGS rotate freely
- ROLLERS move freely in the LOCKING PLATES
- surfaces of the ROLLERS are smooth and clean

[13] Install new parts when necessary.

[14] Check the RACKS for squareness. See “RACK: Squareness.” ADJUSTMENTS AND REPLACEMENTS, Publication No. 3H9568.



[15] Manually rotate the DRIVE CHAIN to check the LINKS of the DRIVE CHAIN.

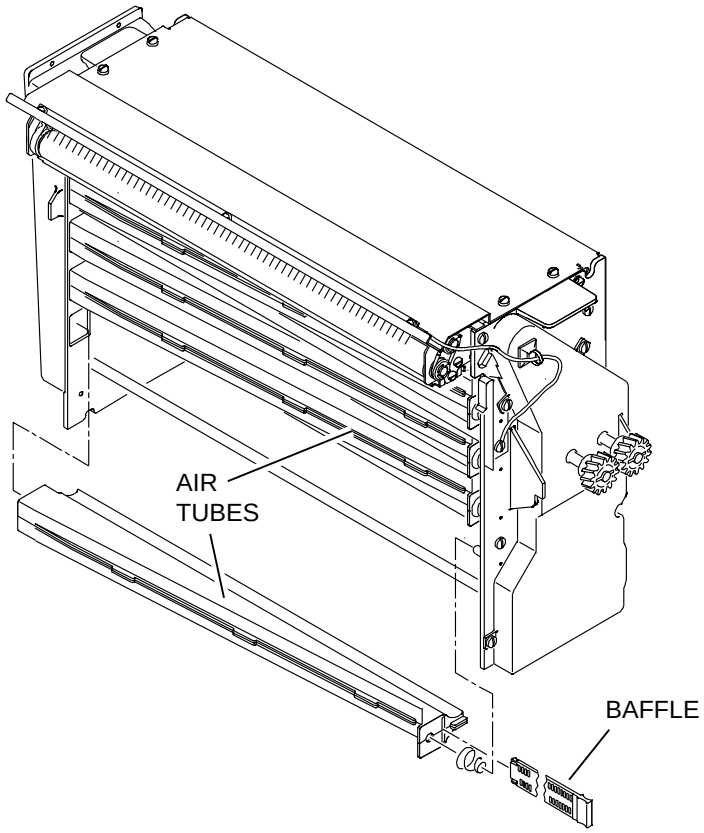
Important

The tension of the DRIVE CHAIN must be correct.

- If the DRIVE CHAIN is too tight, the ROLLERS bind and cause wear.
- If the DRIVE CHAIN is too loose, the ROLLERS do not move smoothly.

[16] Check the tension of the DRIVE CHAIN.

[17] If necessary, do the following procedure using the ADJUSTMENTS AND REPLACEMENTS, Publication No. 3H9568 - “DRIVE CHAIN: DEVELOPER or FIXER RACK”.



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[18] Check that the SLOTS in the AIR TUBES in the DRYER are clean. If the parts are dirty:

(a) Remove the BAFFLES from the AIR TUBES.

(b) Rinse the BAFFLES with water.

(c) Clean the AIR TUBES with a BOTTLE BRUSH and rinse with water.

[19] Wipe any debris from the processing section of the PROCESSOR.

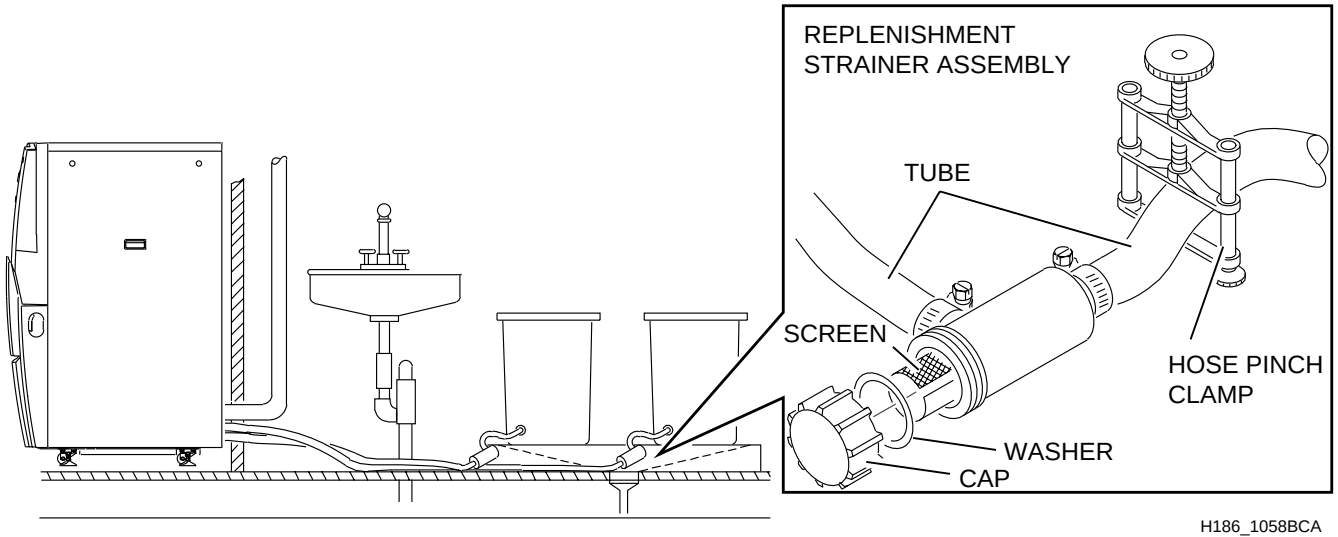
[20] Allow the ENTRANCE CROSSOVER to air dry before you install it in the PROCESSOR.

[21] Install:

- RACKS
- CROSSOVERS
- 2 EVAPORATION COVERS

[22] Check that all parts are seated correctly.

Chemical Replenishment



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[1] To clean the REPLENISHMENT STRAINER ASSEMBLY:

(a) Place the HOSE PINCH CLAMP TL-2170 on the TUBES to stop the replenishment flow.

(b) Remove:

- CAP
- WASHER from CAP
- SCREEN

(c) Clean debris from the SCREEN. Use a soft BRUSH and warm water.

(d) Install the WASHER into the CAP.

(e) Install:

- SCREEN
- CAP

[2] Check the replenishment rates. Do the procedure “Checking the Replenishment Rates”. See “Calibrating the Replenishment System.” in the User Guide for the Multiloader 7000, Part No. 7E6174.

WATER SUPPLY FILTER

[1] Inspect the WATER SUPPLY FILTER for:

- excessive dirt
- leaks
- clogs

[2] If necessary, install a new WATER SUPPLY FILTER.

DRAIN HOSES

Caution

- Any obstruction such as biological growth, tight bends, or an upward sloping WASH DRAIN HOSE can cause wash water to return to the WASH TANK causing an overflow of wash water.
- Concentrations of chlorine bleach higher than 10%, or allowing the chlorine bleach to remain in the PROCESSOR for longer than 30 minutes can cause damage to the PROCESSOR.

[1] Inspect the DRAIN HOSES for:

- wear
- leaks
- obstructions
- biological growth
- tight bends
- upward sloping

[2] If necessary, install new DRAIN HOSES.

[3] Check the WASH DRAIN for:

- biological growth
- tight bends
- obstructions

[4] To remove biological growth:

(a) Fill the WASH TANK and WASH DRAIN with a 10% solution of chlorine bleach.

(b) Wait a **minimum** of 20 minutes and a **maximum** of 30 minutes.

(c) Drain the chlorine bleach solution and rinse the TANK and DRAIN thoroughly with water before you return the PROCESSOR to normal use.

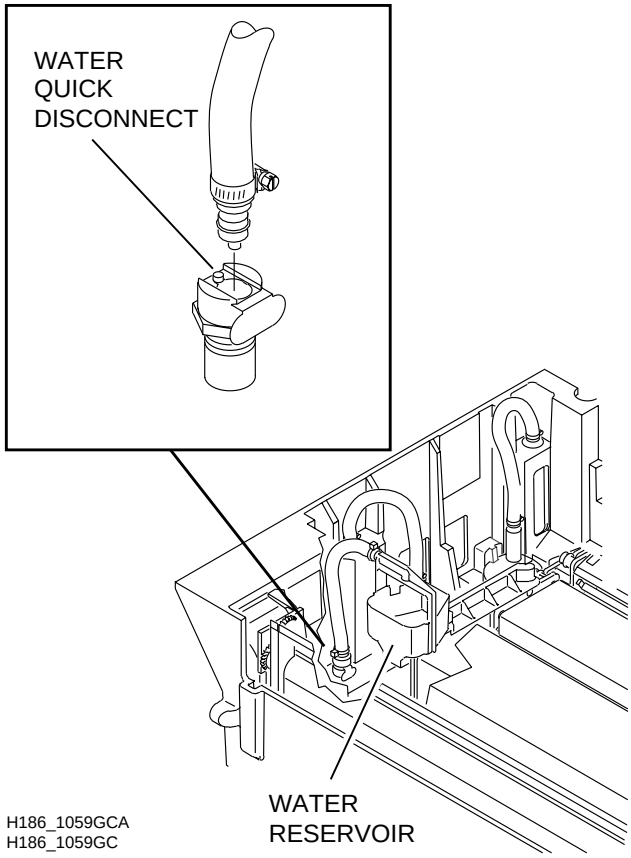
Warning

- Drains at the site must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.
- The drain must have a minimum diameter of 7.6 cm (3.0 in.) and be free of obstruction.
- Drain service must comply with local codes.

[5] Correctly route the WASH DRAIN HOSE to slope down toward the floor drain. If necessary use REINFORCED HOSES that resist tight bends. Some parts are available for site use:

Part	Internal Diameter	Part No.	Order
Reinforced HOSE	5/8 in.	696442	Order by the foot
	1 in.	696441	
ELBOW FITTING	5/8 in.	1C4521	Order each
	1 in.	1C4524	

WATER RESERVOIR



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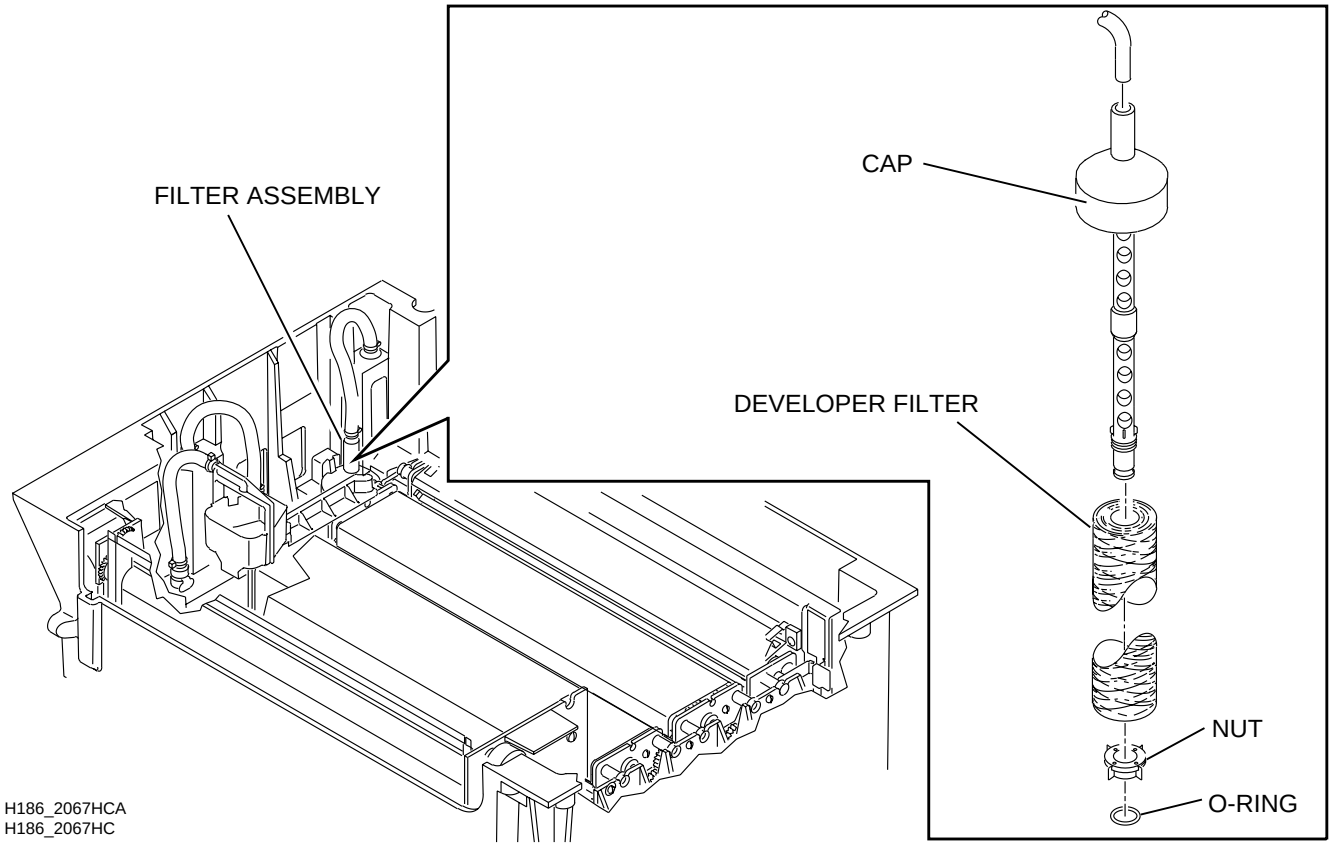
[1] Clean the WATER RESERVOIR. Use warm water and a soft BRUSH, or if biological growth exists, use a 10% bleach solution or another suitable cleaner for plastic.

[2] Install the WATER RESERVOIR in correct position, and insert and lock the WATER QUICK DISCONNECT.

DEVELOPER FILTER

Important

You must install a new DEVELOPER FILTER monthly or after approximately 1000 sheets of film have been processed.



[1] Remove the REPLENISHMENT HOSE from the CAP.

[2] Rotate the CAP of the FILTER ASSEMBLY until the notch aligns with the LEVEL SENSOR HOUSING CLIP.

[3] Remove the FILTER ASSEMBLY by pulling it straight up. Place a DRIP TRAY under the FILTER ASSEMBLY to prevent contaminating the fixer.

[4] Remove:

- O-RING
- NUT
- DEVELOPER FILTER

[5] Install a new DEVELOPER FILTER.

[6] Rotate the CAP of the FILTER ASSEMBLY until it locks.

[7] Install the WET SECTION COVER.

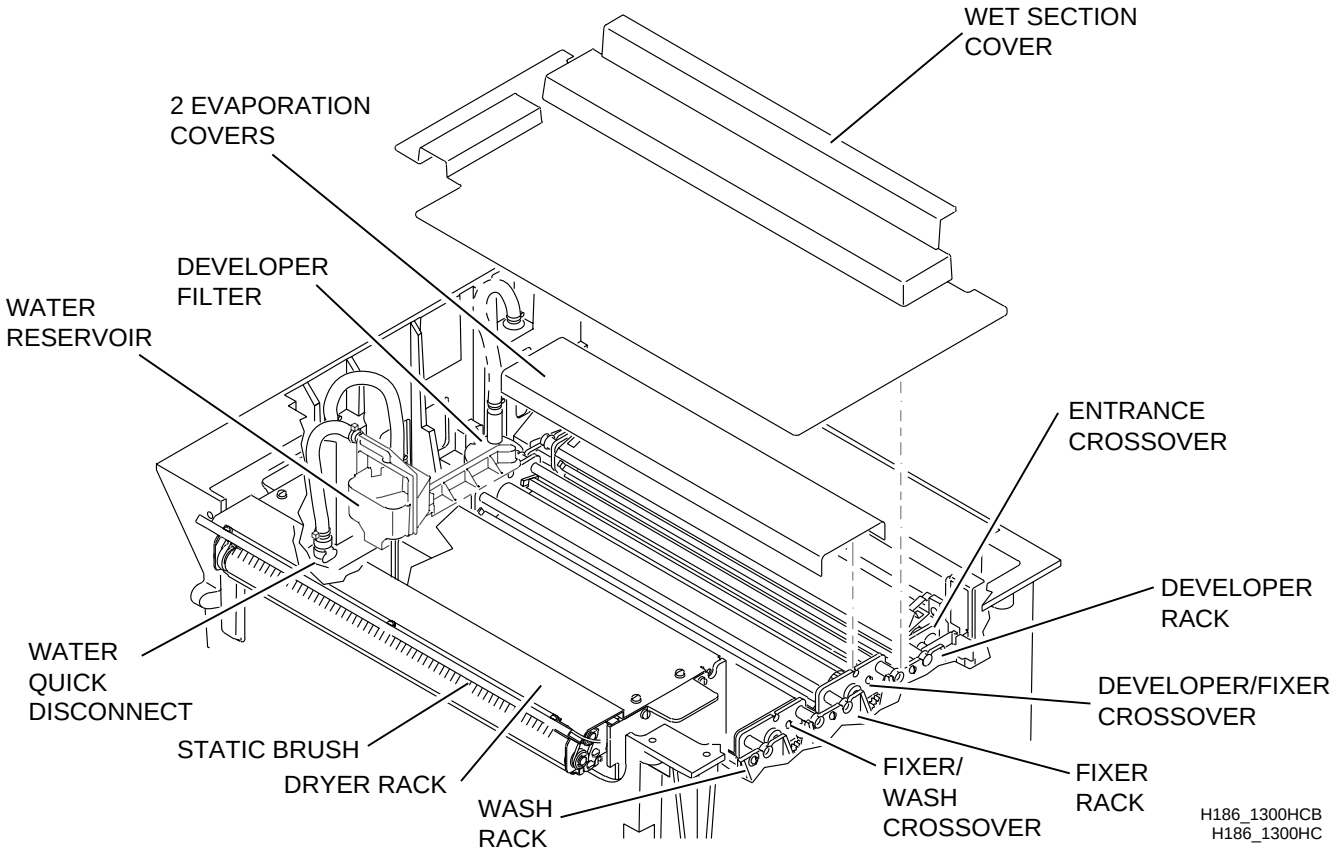
[8] Move the PROCESSOR fully into the MULTILOADER 7000 until latched.

[9] Energize the PROCESSOR.

[10] Process a test film and check for correct operation of the PROCESSOR.

3 Month Procedures

RACKS



Warning
Dangerous Voltage

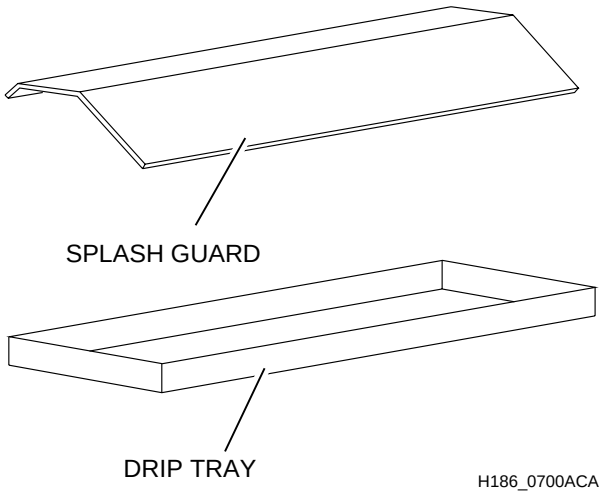
[1] De-energize the PROCESSOR.

[2] Remove the WET SECTION COVER.

[3] Disconnect the WATER RESERVOIR from the CROSSOVERS.

[4] Remove:

- WATER QUICK DISCONNECT
- WATER RESERVOIR
- 2 EVAPORATION COVERS
- 3 CROSSOVERS
- WASH RACK
- DRYER



Caution

Prevent contamination and spills.

[5] Install the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK.

[6] Using the DRIP TRAY, remove:

- DEVELOPER RACK
- FIXER RACK
- SPLASH GUARD

[7] Clean the WASH RACK, FIXER RACK, DEVELOPER RACK, and CROSSOVER ASSEMBLIES. Use warm water and a soft BRUSH to remove all chemical and mineral deposits, or use:

Solution	Catalog No.	ASSEMBLY
Kodak DEVELOPER SYSTEM CLEANER AND NEUTRALIZER	843 4615	• DEVELOPER/FIXER CROSSOVER • DEVELOPER RACK
Kodak FIXER/WASH SYSTEM CLEANER	139 5110	• FIXER/WASH CROSSOVER • FIXER RACK

Important

Prevent damage. Do not use rough cleaning materials that scratch. The rinse water must not exceed 44°C (110°F).

[8] Clean the ROLLERS and GUIDE SHOES with a damp, LINT-FREE CLOTH or synthetic SPONGE.

[9] Remove the CROSSOVER TROUGHS from the DEVELOPER/FIXER CROSSOVER and the FIXER/WASH CROSSOVER.

[10] Check that the CROSSOVER TROUGHS:

- are clean
- have no cracks
- are not broken
- drain freely

[11] Install the CROSSOVER TROUGHS.

[12] On all RACKS, check:

- E-RINGS and SPRINGS for correct tension, breakage, and corrosion
- GEARS for excessive wear
- all GEARS, SPRINGS and E-RINGS in place
- ROLLERS and BEARINGS rotate freely
- ROLLERS move freely in the LOCKING PLATES
- surfaces of the ROLLERS are smooth and clean

[13] Install new parts when necessary.

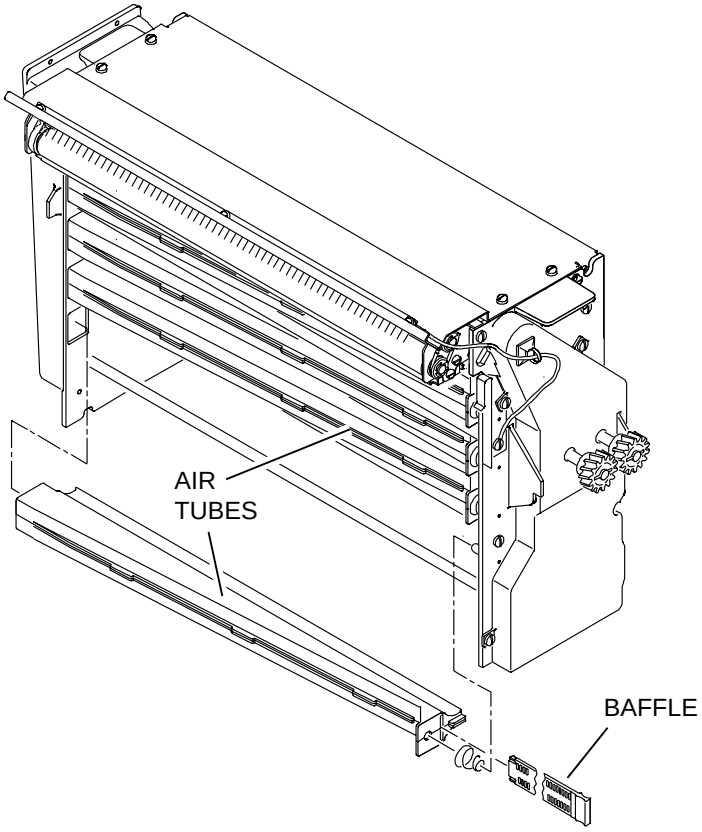
[14] Check the RACKS for squareness. See “RACK: Squareness.” ADJUSTMENTS AND REPLACEMENTS, Publication No. 3H9568.

Warning

- Carefully follow all safety precautions and directions included with the *Kodak* FIXER/WASH SYSTEM CLEANER and *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER.
- The RACKS in the PROCESSOR have hollow ROLLERS. Use the instructions for cleaning RACKS with hollow ROLLERS. Do not immerse RACKS with hollow ROLLERS in SYSTEM CLEANER. SYSTEM CLEANER that remains inside the ROLLERS contaminates the processing solutions.

[15] Clean the DEVELOPER RACK with *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER, Catalog No. 843 4615.

[16] Clean the FIXER RACK, and the WASH RACK, with *Kodak* FIXER/WASH SYSTEM CLEANER, Catalog No. 139 5110.



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[17] Clean any dirty slots in the AIR TUBES.

[18] If parts are dirty:

(a) Remove the BAFFLES from the AIR TUBES.

(b) Rinse the BAFFLES with water.

(c) Clean the AIR TUBES with a BOTTLE BRUSH and rinse with water.

(d) After the AIR TUBES and BAFFLES are dry, install the BAFFLES into the AIR TUBES.

(e) Install the AIR TUBES into the DRYER.

TANKS

Warning

- Carefully follow all safety precautions and directions included with the *Kodak* FIXER/WASH SYSTEM CLEANER and *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER.
- Observe recommendations for personal protective equipment as stated in the Material Safety Data Sheet for the System Cleaners.
- The RACKS in the PROCESSOR have hollow ROLLERS. Use the instructions for cleaning RACKS with hollow ROLLERS. Do not immerse RACKS with hollow ROLLERS in SYSTEM CLEANER. SYSTEM CLEANER that remains inside the ROLLERS contaminates the processing solutions.
- When circulating SYSTEM CLEANER or water through the recirculation system, energize the developer COOLING SOLENOID and the RECIRCULATION PUMP using the LAPTOP COMPUTER. Otherwise the following may occur:
  - The effectiveness of the DEVELOPER SYSTEM CLEANER AND NEUTRALIZER is greatly reduced because of the developer remaining in the HEAT EXCHANGER.
  - The DEVELOPER SYSTEM CLEANER AND NEUTRALIZER remaining in the HEAT EXCHANGER contaminates the new developer when the PROCESSOR is returned to operation.

[1] Drain the TANKS.

[2] With the RACKS out of the TANKS, clean the DEVELOPER TANK with *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER, Catalog No. 843 4615.

[3] Clean the FIXER TANK with *Kodak* FIXER/WASH SYSTEM CLEANER, Catalog No. 139 5110.

[4] Clean the WASH TANK with *Kodak* FIXER/WASH SYSTEM CLEANER or, if biological growth exists, clean the WASH TANK with a 10% solution of chlorine bleach.

[5] Wipe any debris from the processing section of the PROCESSOR.

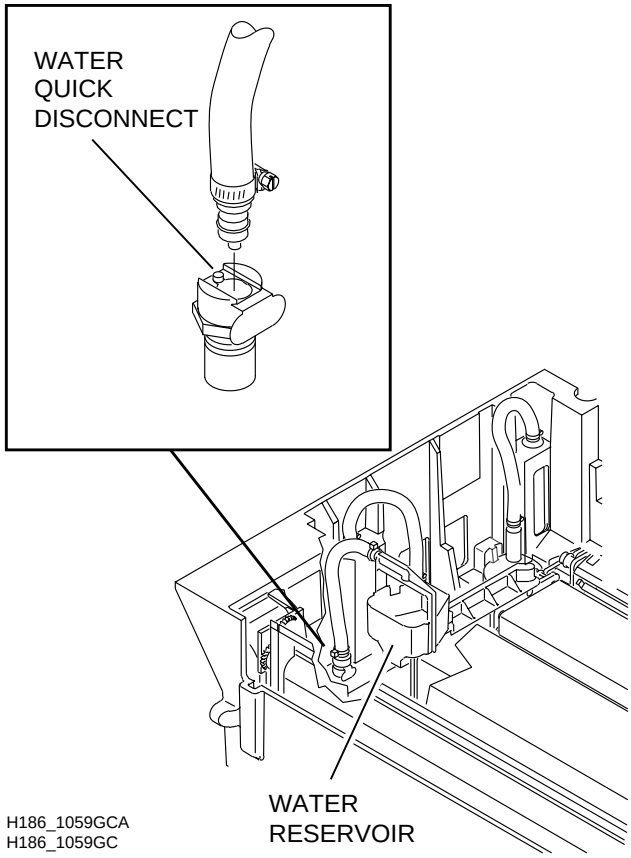
[6] Allow the ENTRANCE CROSSOVER to air dry before you install it in the PROCESSOR.

[7] Install:

- 3 RACKS
- DRYER
- 3 CROSSOVERS
- 2 EVAPORATION COVERS

[8] Check that each part is seated correctly.

WATER RESERVOIR



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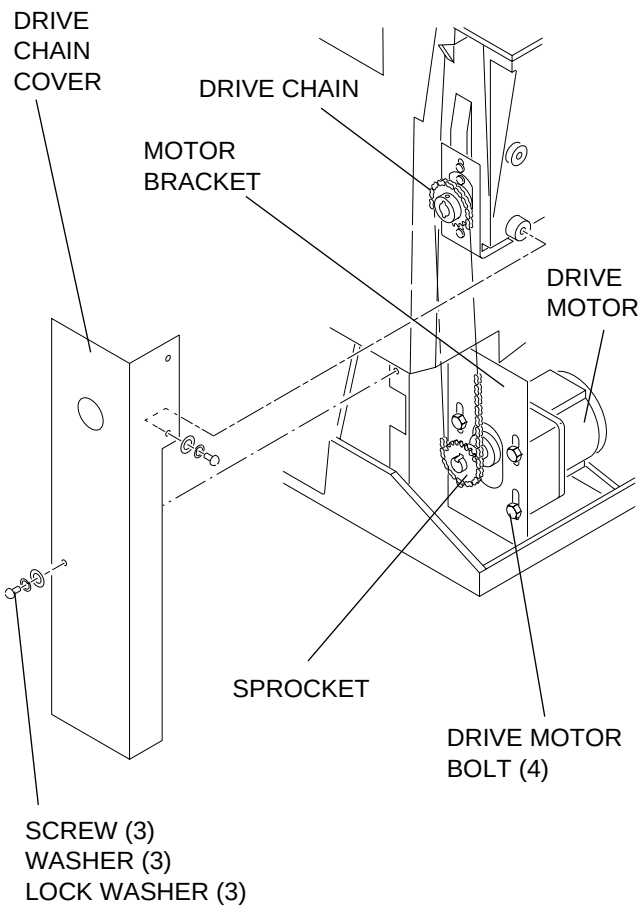
[1] Clean the WATER RESERVOIR. Use warm water and a soft BRUSH, or if biological growth exists, use a 10% bleach solution or another suitable cleaner for plastic.

[2] Install the WATER RESERVOIR in correct position, and insert and lock the WATER QUICK DISCONNECT.

MAIN DRIVE



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[1] Remove:
- SAFETY SHIELD
- DRIVE CHAIN COVER

[2] Check the DRIVE CHAIN for wear.

[3] Install a new DRIVE CHAIN if necessary.

[4] Check the tension of the DRIVE CHAIN.

[5] If necessary:
- do the procedure “Adjusting the MAIN DRIVE CHAIN” in the ADJUSTMENTS AND REPLACEMENTS, Publication No. 3H9568
- apply NLGI - No. 2 LITHIUM BALL AND ROLLER BEARING GREASE TL-2324 to the surface of the CHAIN

[6] Check:
- BEARINGS for wear
- SPROCKETS for wear and sharp edges
- WORM GEARS for wear and rough edges

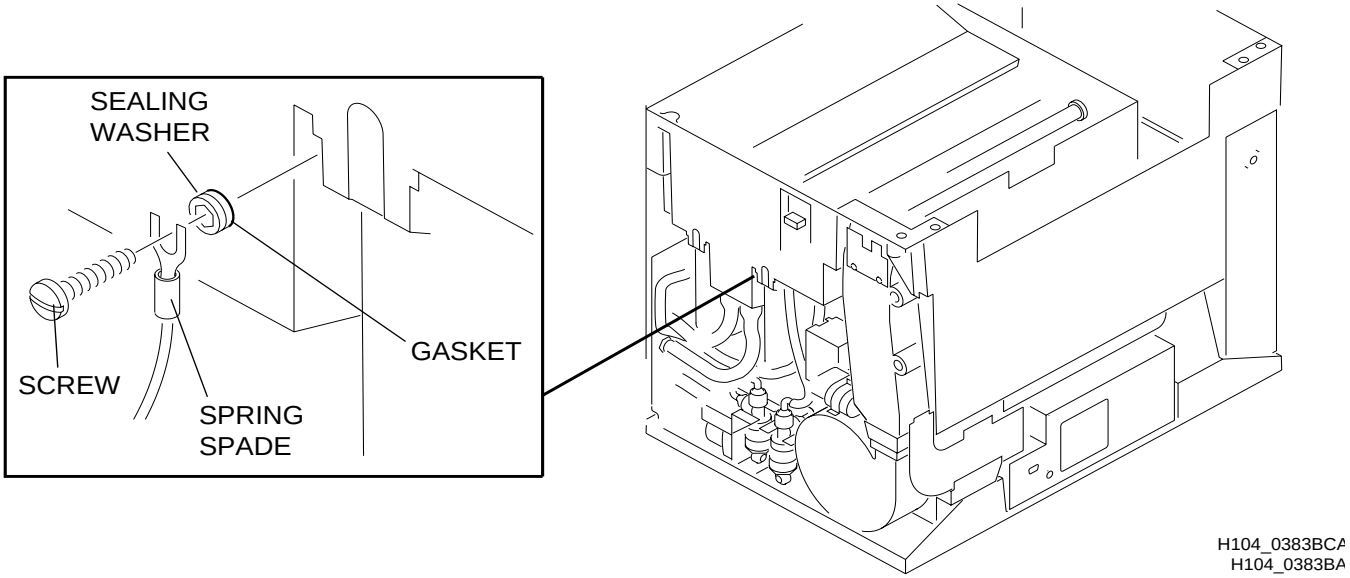
[7] If necessary, install new:
- BEARINGS
- SPROCKETS
- WORM GEARS

LEVEL SENSOR

[1] If necessary, clean the LEVEL SENSOR PROBES with the correct SYSTEM CLEANER.

Note

If necessary, you may use DEVELOPER SYSTEM CLEANER AND NEUTRALIZER on the DEVELOPER LEVEL SENSOR PROBE and FIXER/WASH SYSTEM CLEANER on the FIXER LEVEL SENSOR PROBE.



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[2] Check the SPRING SPADES on the LEVEL SENSOR PROBES for corrosion. If necessary, clean or install new SPRING SPADES.

[3] Close the DRAIN VALVES and fill the processing TANKS with processing solutions and starter where necessary.

[4] Install the WET SECTION COVER.

[5] Energize the PROCESSOR.

[6] Process a test film and check the PROCESSOR for correct operation.

[7] Check the negative static pressure at the EXHAUST VENT for the DRYER. See “Connecting the EXHAUST SYSTEM.” in the Installation Instructions of the Multiloader 7000, Part No. 5E9998.

[8] Calibrate the REPLENISHMENT PUMPS. See “Calibrating the Replenishment System.” in the User Guide for the Multiloader 7000, Part No. 7E6174..

Section 3: Maintenance Schedule

Part or Assembly	Weekly*	Monthly	3 Month Schedule
ENTRANCE CROSSOVER	C	I,C	I,C
DEVELOPER/FIXER CROSSOVER	C	I,C	I,C(1)
FIXER/WASH CROSSOVER	C	I,C	I,C(2)
WASH RACK	C	I,C	C(2)
DEVELOPER RACK		I,C	C(1)
FIXER RACK		I,C	C(2)
DRYER RACK		I,C	I,C
RACK BEARINGS, CHAINS, and DRIVE GEARS		I	I
Squareness of RACKS		I	I
DRYER AIR TUBES		I,C	I,C
DEVELOPER FILTER		R	R
REPLENISHMENT STRAINERS and FILTERS		C	C
WATER SUPPLY FILTER		R	R
DRAIN HOSES		I,R	I,R
Ventilation Exhaust			T
DRIVE MOTOR CHAIN			I,L
LEVEL SENSOR PROBES			C
SPRING SPADES on the LEVEL SENSOR PROBES			C(3)
DEVELOPER PROCESSOR TANK			C(1)
FIXER and WASH PROCESSOR TANKS			C(2)
Calibration of the REPLENISHMENT PUMPS			T
WATER RESERVOIR	C	C	C

I	=	Inspect for condition and adjust or install new parts, if necessary.
L	=	Apply recommended lubricant.
R	=	Replace, if necessary.
T	=	Test and adjust, if necessary.

* The weekly preventive maintenance procedures can be performed by the operator of the PROCESSOR or by the trained service provider. Completion of the monthly preventive maintenance procedures is recommended to ensure the optimum reliability of the PROCESSOR.

C	=	Rinse and clean carefully and completely using warm water and a soft sponge.
C(1)	=	Clean with *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER.
C(2)	=	Clean with *Kodak* FIXER/WASH SYSTEM CLEANER.
C(3)	=	Clean any corrosion from the SPRING SPADES.

The 3 month schedule is a guideline for sites adhering to the site specifications issued by Kodak. Actual usage and site characteristics may require shorter intervals between maintenance.

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